Alexander (Zander) Kelley

CONTACT
INFORMATION

email: awk@ias.edu
web: https://zanderkelley.com

RESEARCH
INTERESTS

computational complexity, pseudorandomness, communication complexity,
extremal and additive combinatorics, number theory

EDUCATION

University of Illinois at Urbana-Champaign

Ph.D., Computer Science, August 2024

- Dissertation: Explicit Pseudorandom Distributions for Restricted Models of Computation
- Advisor: Michael A. Forbes

Texas A&M University

B.S. Computer Science, May 2017

- Honors Distinction

B.S. Mathematics, May 2017

- Honors Distinction

POSITIONS

Postdoctoral Member, Sept 2024 - Present
School of Mathematics
Institute for Advanced Study, Princeton

HONORS AND
AWARDS

Best Paper Award, FOCS 2023

SELECTED
PUBLICATIONS

Amir Abboud, Nick Fischer, Zander Kelley, Shachar Lovett, Raghu Meka
New Graph Decompositions and Combinatorial Boolean Matrix Multiplication Algorithms
STOC 2024

Zander Kelley, Shachar Lovett, Raghu Meka
Explicit Separations Between Randomized and Deterministic Number-on-Forehead Communication
STOC 2024

Zander Kelley, Raghu Meka
Strong Bounds for 3-Progressions
FOCS 2023

Zander Kelley, Raghu Meka
Random Restrictions and PRGs for PTFs in Gaussian Space
CCC 2022

Zander Kelley
An Improved Derandomization of the Switching Lemma
STOC 2021

Michael Forbes, Zander Kelley
Pseudorandom Generators for Read-once Branching Programs, in Any Order
FOCS 2018

Zander Kelley
Roots of Sparse Polynomials Over a Finite Field
ANTS 2016

PROFESSIONAL
ACTIVITIES

Conference Reviews
ITCS 2024, SODA 2024, STOC 2023, ICALP 2023, CCC 2022, STOC 2022, STOC 2020,
ICLR 2020, FOCS 2019

Journal Reviews
Theory of Computing

Invited Talks
Number Theory Seminar (University of Oxford, 2024)
Atlanta Discrete Analysis Seminar (Georgia Institute of Technology, 2023)
Shandong University Number Theory and Combinatorics Seminar (Shandong University, 2023)
Cornell Junior Theorists' Workshop (Cornell University, 2023)
Beyond the Boolean Cube (Simons Institute for the Theory of Computing, 2023)
Theoretical Computer Science and Discrete Mathematics Seminar (Institute for Advanced Study, 2023)

TEACHING
EXPERIENCE

Graduate Teaching Assistant
University of Illinois Urbana-Champaign
Fall 2018 - Present
- CS473: Algorithms
- CS374: Introduction to Algorithms
- CS579: Computational Complexity

Undergraduate Teaching Assistant
Texas A&M University
Fall 2015
- MATH170: Calculus Retention Lab